

SWINGLEUS POLYCLITHROIDES GEN. ET SP. N.
(MONOGENEA: GYRODACTYLIDAE) FROM
FUNDULUS GRANDIS BAIRD AND GIRARD¹

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ABSTRACT

Swingleus polyclithroides, a new genus and species of gyrodactylid Monogenea, is described from the gulf killifish, *Fundulus grandis* Baird and Girard. This species is unique in the possession of the following combination of characters, 1) marginal hooks distributed in two groups as in *Polyclithrum mugilini* Rogers, 1967, 2) a peduncular bar as in *Gyrodactylus megacephalus* Wellborn and Rogers, 1967, *G. trematoelithrus* Rogers, 1967, and *G. prolongis* Hargis, 1955, 3) absence of a deep (dorsal) bar, and 4) the presence of lateral accessory bars. The presence of a peduncular bar indicates a strong relationship to the species of *Gyrodactylus* possessing this structure while the marginal hooks being distributed in two groups and the presence of lateral accessory bars shows a relationship to *Polyclithrum* Rogers, 1967. Since the above mentioned features are intermediate between the subfamilies Gyrodactylinae and Polyclithrinae, the subfamily status of *Swingleus* is unclear at this time.

The species described herein was collected as part of a survey of fish parasites being conducted by the Southeastern Cooperative Fish Parasite and Disease Project. Hosts were collected with a seine. The fish were immediately placed in a container of 1:4,000 formalin solution (Putz and Hoffman, 1963). After 1 hour, formalin was added to the container to make a 5% solution. The parasites were later recovered for study in the laboratory from the solution. Specimens were treated and measured as described by Rogers and Wellborn (1965). All measurements are in microns. Averages of measurements

are given followed by the range in parentheses. Drawings were made with a camera lucida. The keys to the members of Gyrodactylidae in Yamaguti (1963) were used to determine the status of the present species.

Swingleus gen. n.

Generic diagnosis: Gyrodactylidae: head bilobed, head organs present. Pharynx pyramidal, gut bifurcate, not confluent posteriorly. Cirrus with spine and several spinelets. Testis not observed with certainty, appears preovarian. Peduncular bar present. Haptor with one pair of anchors, ventral bar, pair of lateral winglike bars, and 16 marginal hooks. Dorsal bar absent. Anchor base with cap of dense tissue. Marginal hooks distributed in two groups, each of first three pairs located on anterolateral margin, remaining five pairs on posterior margin. Parasitic on fish.

Type species: *Swingleus polyclithroides* sp. n.

Type host: *Fundulus grandis* Baird and Girard.

Type locality: Mobile Bay at Mobile Causeway, Baldwin County, Alabama.

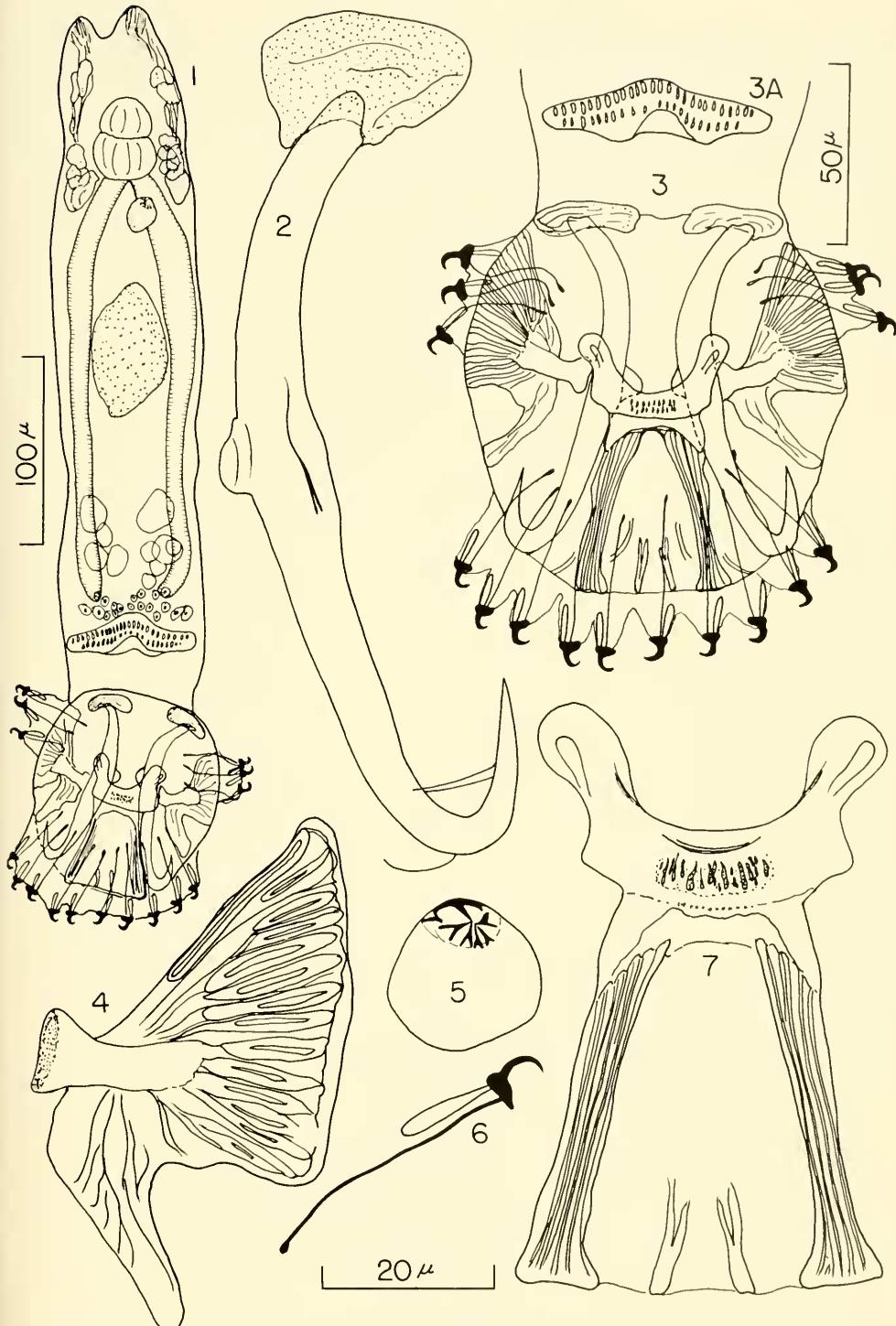
Remarks: This genus appears to be closely related to *Polyclithrum* Rogers, 1967 (Rogers, 1967a) by possessing lateral bars and having hooks distributed in two groups. Anchor shape, ventral bar shape, and the presence of a peduncular bar indicate a strong relationship to certain species of *Gyrodactylus* occurring on *Fundulus* spp., (see Wellborn and Rogers, 1967; Rogers, 1967b). *Gyrodactylus prolongis* Hargis, 1955, was collected at the same time as *S. polyclithroides* and anchor and ventral bar shape

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Figures 1-7. *Swingleus polyclithroides* gen. et sp. n. Scale of 100 microns applies to Fig. 1; 50 micron scale applies to Fig. 3, 3A; and 20 micron scale applies to all other figures. 1. Entire worm, ventral view. 2. Anchor. 3. Haptor. 3A. Peduncular bar. 4. Lateral winglike bar. 5. Cirrus. 6. Hook. 7. Ventral bar and shield.

of these two species are very similar. A peduncular bar occurs on *G. prolongis* similar to the peduncular bar of *S. polyclithroides*. This bar has a series of small ridges and depressions appearing as spines. Hargis (1955) reported this bar as an "anteriorly directed skirt whose edge is armed by several cuticularized points." The similarities to the above mentioned species of *Gyrodactylus* (subfamily Gyrodactylinae) and to *Polyclithrum mugilini* (subfamily Polyclithrinae) makes the subfamily status of *S. polyclithroides* unclear at this time. This genus is named in honor of Dr. H. S. Swingle of Auburn University.

Swingleus polyclithroides sp. n.
(Figures 1-7)

Host and locality: *Fundulus grandis* Baird and Girard, Gulf killifish, Mobile Bay at Mobile Causeway, Baldwin Co., Alabama.

Location on host: Fins and body.

Specimens studied and measured: Ten.

Type specimens: Holotype and 2 paratypes, USNM Helm. Coll. Nos. 70445 and 70446; paratypes in author's collection.

Description: Length 479 (390 to 620), width 94 (80 to 130). Cephalic area with two prominent lobes, each containing several spines. Cephalic glands prominent, lateral to posterior edge of pharynx; head organs well developed. Pharynx bilobed in side view, posterodorsal lobe larger, 35 (30 to 39) in diameter, anteroventral lobe 28 (25 to 39) in diameter. Gut bifurcate with crura ending blindly at level of gonads. Cirrus (Fig. 5) located ventrally to left of and posterior to pharynx, with large spine and 2 to 5 spinelets, diameter 15 (13 to 19). Testis preovarian? Ovary with many diffuse eggs in various stages of development. Peduncular bar present, with many small oblong to elongate depressions (Fig. 3A), greatest length of bar 66 (63 to 69); width 19 (18 to 20). Haptor (Fig. 3) circular to oblong, with one pair of anchors supported by a ventral bar and lateral "winglike" bars, and 16 marginal hooks. Haptor length 109 (105 to 135), width 96 (70 to 108). Anchors (Fig. 2) with prominent knobs apparently representing vestigial dorsal bar, points with arc membranes (Mizelle and Kritsky, 1967) and

small membranes arising from shaft near point similar to "wings" of dactylogyrids, base of anchor shaft with dense cap of tissue; anchor length 96 (92 to 100), width 10 (9 to 11), point length 23 (21 to 25). Ventral bar (Fig. 7) articulated in prominent folds on anchor shaft, with shield terminating at posterior edge of haptor, anterolateral projections of ventral bar with thickened area, central portion of bar with coarse striations. Bar 37 (33 to 45) by 11 (9 to 12), anterolateral projection length 12 (10 to 13). Shield of ventral bar with coarse striations on margins and 2 forked ridges postero-medially, shield length 46 (42 to 48), width 42 (40 to 45). Lateral bars (Fig. 4) wing-like, with coarse striations distally, base articulated to anchor shaft, length along bar axis 37 (34 to 39). Marginal hooks 16 in number, located dorsally on haptor, first 3 pairs in 2 groups at anterolateral edge of haptor, remaining 5 pairs on posterior edge of haptor (Figs. 1, 3). Shaft of each hook (Fig. 6) with slight enlargement proximally, shaft length 32 (30 to 33), hook length 7 to 8, lamella length 12 (11 to 13).

Remarks: This is the only species reported in the genus. It was found on the host in association with *Gyrodactylus prolongis* Hargis, 1955. The name *polyclithroides* refers to the similarity to the genus *Polyclithrum*.

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